

Content of Response

(1) The following comments were provided in the PCT Opinion dated March 23, 2004.

(a) Claims 3 and 5 to 13 possess novelty and inventive step.

(b) Claims 1 to 2 and 4 do not possess novelty and inventive step.

(2) The Examiner is stating that since page 2, right column, line 49 to page 3, left column, line 11 of the specification of Document 1 indicated in the International Search Report describes, "Purified water was added to 1.3kg of copper sulfate crystal...for obtaining aqueous solution A...pH of A was 2.0...solution was evaporated to 1.9 liters...sediment B of a yellow color that is generated was filtered and separated...concentrated to 0.8 liters...cooled solid-liquid was separated...", the invention of claims 1 to 2 and 4 is the same as the invention of Document 1, or is an invention that could have been easily achieved based on the invention of Document 1.

Nevertheless, the foregoing comment is an erroneous comprehension of the invention of Document 1. Thus, the comment that the invention of claims 1 to 2 and 4 is the same as, or could have been easily achieved from, the invention of Document 1 is erroneous. The reason for this is explained below.

(3) The invention of claim 1 is "A manufacturing method of high purity copper sulfate, including the steps of dissolving copper sulfate crystals in purified water, performing evaporative concentration thereto, removing the crystals precipitated initially, performing further evaporative concentration to effect crystallization, subjecting this to filtration to obtain high purity copper sulfate, and performing desiccation thereto."

As evident from the description of claim 1, the present invention dissolves copper sulfate in purified water, performs evaporative concentration thereto, and removes the crystals precipitated initially.

To cite a description from the examples specifically showing the above, "250g of commercially available copper sulfate ($\text{Cu}_2\text{SO}_4 \cdot 5\text{H}_2\text{O}$) having a [purity]

level of 99.9wt% containing the impurities was dissolved in 1000ml of purified water at room temperature. Next, this was heated at 90°C to evaporate water in a prescribed amount. Next, this was cooled to room temperature, the initial crystals were precipitated, and subject to filtration. (snip) Next, the filtration solution of the copper sulfate with improved purity obtained by removing the initial 50g of the crystal in Table 2 was reheated at 90°C, and water was evaporated in a prescribed amount. Then, this was cooled to room temperature, the refined copper sulfate crystal was precipitated, and subject to filtration." This verifies the invention of claim 1.

(4) Contrarily, Document 1 describes "Purified water was added to 1.3kg of copper sulfate crystal for obtaining aqueous solution A of 2 liters. The pH of solution A was 2.0. Solution A was mixed powerfully and heated so as to engulf air, maintained at 85°C or higher for 1 hour even after being completely dissolved, and the solution was evaporated to 1.9 liters. Incidentally, with the concentration at this point in time, even if it is cooled, although it should not be supersaturated and crystals should not be precipitated in terms of solubility, the sediment B of a yellow color that is generated was filtered and separated. (snip) As shown in Table 1, hardly any nickel was contained in sediment B precipitated by heating A, and the copper sulfate recrystallized by dissolving this sediment again; that is, high purity copper sulfate D with an extremely low nickel content of 0.0004wt% (4ppm) with substantially a single step of concentration was obtained." Thus, Document 1, after dissolving the copper sulfate in purified water, employs the recrystallized yellow sediment B.

(5) As evident from the comparison of the present invention and Document 1, whereas the present invention obtains a refined copper sulfate crystal by using the filtration solution obtained by dissolving copper sulfate crystals in purified water, subjecting this to concentration, cooling, and removing the crystals initially precipitated, Document 1 is of an entirely opposite idea, and obtains high purity copper sulfate by using the sediment obtained by dissolving copper sulfate in

purified water, subjecting this to concentration and cooling, and dissolving and heating this again, and concentrating and cooling this to effect recrystallization.

Further, in the examples of the present invention, an Ni content of 0.2ppm has been achieved. Meanwhile, since the examples of Document 1 only achieve 0.0004wt% (4ppm), the present invention yields a far more superior refining effect than Document 1.

(6) As described above, the invention of claim 1 and the invention of Document 1 relate to entirely different techniques, are not the same, and Document 1 cannot be used as grounds for stating that the present invention could have been easily achieved based on the invention of Document 1. In addition, the invention of Document 1 is inferior to the present invention.

It has been described above that claim 1 clearly possesses novelty and inventive step in the comparison of claim 1 and Document 1. And, since claims 2 and 4 are dependent on claim 1, the invention of claims 2 and 4 also possesses novelty and inventive step as a matter of course.

Accordingly, since the remark of the invention pertaining to claims 1 to 2 and 4 being the same as, or easily achieved based on, Document 1 is erroneous, we hereby request the reexamination of claims 1 to 2 and 4, and look forward to receiving the judgment that the invention of claims 1 to 2 and 4 also possesses novelty and inventive step.